Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Claim 1 (original): An optical clean-up filter with a desired complex spectral response, which comprises a plurality of tapered fiber filters concatenated in line on a single-mode optical fiber, said tapered fiber filters having specific wavelength response designs which closely match corresponding individual specific simulated responses resulting from a prior decomposition by means of a computer program or algorithm of the desired complex spectral response into said individual specific simulated responses, and subsequent in-line concatenation of said tapered fiber filters with the specific wavelength response designs to produce the desired complex spectral response in the clean-up filter.

Claim 2 (currently amended): An optical clean-up filter according to claim 1, in which the tapered fiber filters that are produced to match simulated responses with amplitudes of less than 3 dB have a tapered profile with a central beating region and a taper slope ~~such as~~ adapted to minimize higher order modulation in the resulting responses.

Claim 3 (currently amended): ~~A method~~ An optical clean-up filter according to claim 1, in which the tapered fiber filters that are manufactured to match simulated responses with amplitudes of ~~less~~ more than 3 dB ~~are produced with~~ have a tapered profile having a central beating region and a ~~taper slope~~ coupling region at each end of said beating region with a non-adiabatic taper, thereby forming a tapered filter adapted to minimize ~~higher order~~ modulation in the resulting responses.

Claim 4 (currently amended): ~~A method~~ An optical clean-up filter according to claim 1, in which the plurality of tapered fiber filters ~~that are manufactured to match simulated responses with amplitudes of more than 3 dB~~, are produced ~~with a tapered profile having a central beating region and a coupling region at each end of said beating region with a non-adiabatic taper, thereby forming a tapered filter adapted to minimize modulation in the resulting responses~~

individually and then concatenated with one another by splicing them in-line on a single-mode optical fiber.

Claim 5 (currently amended): ~~A method~~ An optical clean-up filter according to claim 1, in which the plurality of tapered fiber filters are ~~manufactured separately to match individual simulated responses and then are concatenated in-line by splicing them on a single mode fiber~~ produced directly in-line on a single-mode optical fiber.

Claim 6 (currently amended): A method ~~according to claim 1, in which the tapered filters are produced in-line on the same single mode fiber to match the individual simulated responses~~ of manufacturing an optical filter with a desired spectral response, which comprises:

(a) initially decomposing the desired spectral response into individual simulated responses using a suitable computer program or algorithm;

(b) then manufacturing tapered fiber filters with parameters that closely match the individual simulated responses; and

(c) concatenating said tapered fiber filters on a single-mode fiber to produce the optical filter with a total response that closely matches the desired spectral response.

Claim 7 (currently amended): A method according to claim ~~1~~ 6, in which~~, upon their manufacture, the tapered fiber filters are bonded to a substrate and packaged in a protective packaging~~ the computer program for decomposing the desired spectral response into individual simulated responses of independent sine waves uses the following equation:

$$T = \beta [1 - \alpha \sin^2 (\lambda - \lambda_0) \pi / \Lambda]$$

where:

T is the optical transmission of the filter,

α is the amplitude of the filter,

β is the maximum transmission,

λ is the wavelength,

λ_0 is the reference wavelength or center wavelength of the filter, and

Λ is the wavelength period

and the product function for a plurality of such responses is calculated using the

following equation:

$$F = T_1 \times T_2 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \times T_N$$

where:

F is the resulting filter function of the concatenation of the tapers that have the independent transmissions T_1 to T_N.

Claim 8 (currently amended): ~~An optical filter with a desired spectral response when produced by the~~ A method according to claim ~~+~~ 6, in which the tapered filters are manufactured separately to match individuals simulated responses and then are concatenated in-line by splicing them on a single-mode fiber.

Claim 9 (currently amended): A method according to ~~claims 6 or 7~~ claim 6, in which the tapered filters are produced in-line on the same single-mode ~~filter~~ fiber to match the individual simulated responses.

Claim 10 (currently amended): A method according to ~~any one of claims 6 to 9~~ claim 6, in which, upon their manufacture, the tapered fiber filters are bonded to a substrate and packaged in a protective packaging.